## REMARKS

Claims 1-17 and 22-34 are pending in the application.

Claims 1, 3, 13, 26 and 29 are amended above.

New claims 32-34 are added to the application.

No new matter is added to the application by the addition of these new claims to the application.

## I. THE DRAWING OBJECTION

The examiner objected to the drawings for being incomplete. In particular, the examiner objected to the drawings for failing to disclose "frustoconical side faces".

The examiner's drawing objection is traversed because the drawings, and in particular the claimed faces of the spikes are described on page 4, lines 14-17 with reference to Figure 5. Figure 5 in particular shows that there are three flat triangular faces 13A separated by three frustoconical faces 13B. Since the barb 13 is machined from a solid cone to produce the flat faces 13A it follows that the intervening unmachined faces 13B will be remnants of the original cone, i.e. frustoconical. While it is appropriate to characterise all these faces as "side" faces as they are located on the sides of the barb 13 as shown more particularly in Figures 4 and 6, the Applicant has nonetheless chosen to clarify this claim feature by deleting the term "side" before the term "faces" in claim 3 to make claim terminology consistent with the specification terminology.

## II. THE CLAIM OBJECTION

The examiner objected to certain terminology used in claim 13.

The examiner's objection is overcome by amending claim 13 as the examiner suggested in the Office Action.

## III. THE SECTION 112, 2nd PARAGRAPH REJECTION

The examiner rejected claims 13-16, 22 and 24-25 under the 2nd paragraph of Section 112 for include the indefinite terminology "taking a net" in claim 13.

The examiner's rejection is overcome by amending claim 13 to refer to "the net"

previously introduced in the claim.

## IV. TRAVERSE OF THE EXAMINER'S OBVIOUSNESS REJECTIONS

The examiner rejected claims 1-2, 4-5, 10, 12, 17, 23 and 26-31 for being obvious over Horton (USP 6,409,420) in view of Uotila (USP 5,310,277). The examiner's obviousness rejection is traversed below because the references are not logically combinable and because the cited prior art fails to disclose all rejected claim features.

### A. The Examiner's Combination Of Prior Art References Is Illogical

A first reason why claims 1-2, 4-5, 10, 12, 17, 23 and 26-31 are patentable is because the examiner's basis for combining the references is illogical. In particular, the Horton and Uotila devices are dramatically different in their construction and operation and Uotila actually contradicts the examiner's basis for combining the references. Both Horton and Uotila use nets in their devices. However, Horton's net is laid horizontally on the ground and uses spikes to attach the net to both the front and rear tires so that the tires are effectively locked together and prevented from further rotation, all as seen in the reference's Figures 8-11. On the other hand Uotila's net has no spikes and is supported in an *upright* condition (as between posts 6) above the ground to envelope the front of the vehicle as seen in the reference's Figures 5-7.

The examiner's obviousness rejection relies upon the following logic for combining features of the cited prior art devices:

> It would have been obvious to one of ordinary skill in the art, at the time of the invention was made to provide [the] vehicle capture net of Horton et al., with rhombus shaped openings, having a size consistent with the size of vehicle tires, intended to be captured, as taught by Uotila, in order to facilitate wrapping the net around the axle(s) of the vehicle.

However, Uotila discloses that net has openings consistent with the size of a vehicle tire so that the tires "go through the net.". (See Uotila at col. 8, lines 7-12). The fact that the Uotila net is sized to allow a tire to pass through the net would be understood by one skilled in the art at the time of the invention to cause the net to be of little use in Horton where the tires must run over the net in registry with the elongated lengthwise cables 126 so that spikes attached to the net at the cable junctions attach to the tires. Clearly, therefore, it would be illogical to modify the Horton net to include features of the Uotila net for the reason the examiner has provided because

the modification suggested by the examiner would mean that the cables (and hence spikes) are spaced apart to accommodate the width of a tire. This would make it much more likely that the tires would pass through the gaps between the spikes and therefore make it much less likely that a tire would engage a net spike, if the Horton net mesh size was increased. The Applicant, therefore, has traversed the examiner's obviousness rejection by demonstrating that the examiner's basis for combining the references is illogical.

**B. There Is No *Prima Facie* Case Of Obviousness**

**1. The is no *prima facie* case of obviousness of independent claim 1**

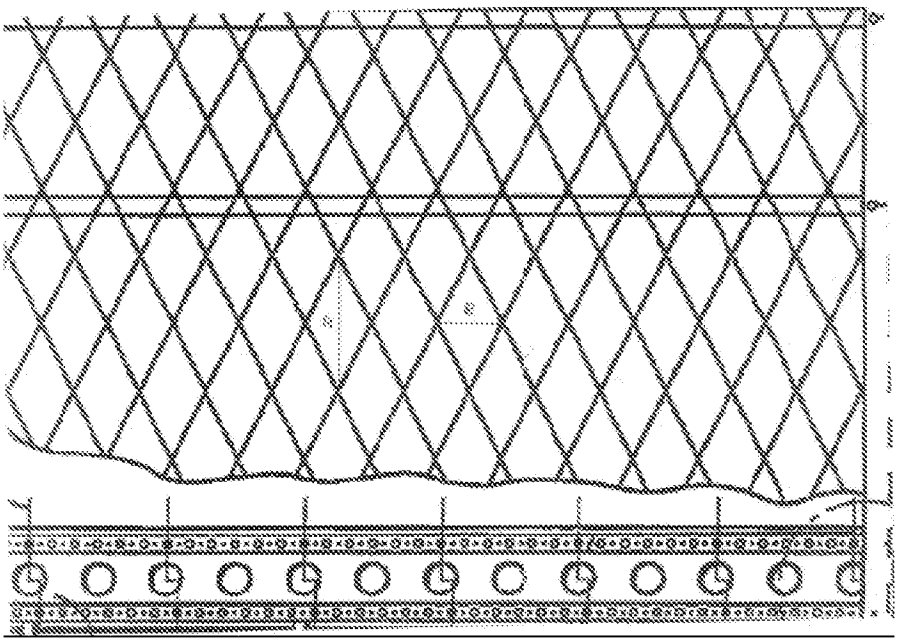
Claims 1-2-8, 10-12, 17, 23 and 31 are further non-obvious and patentable because, even if the two references were combined, there still is no prima facie case of obviousness – the references do not disclose or suggest all of the features of Applicant's independent claim 1.

A first reason why there is no *prima facie* case it because neither reference device functions by wrapping around the front wheels of the vehicle so that *the portion of the net between those wheels is pulled tight under the vehicle* to prevent further rotation of those wheels as required by independent claim 1.

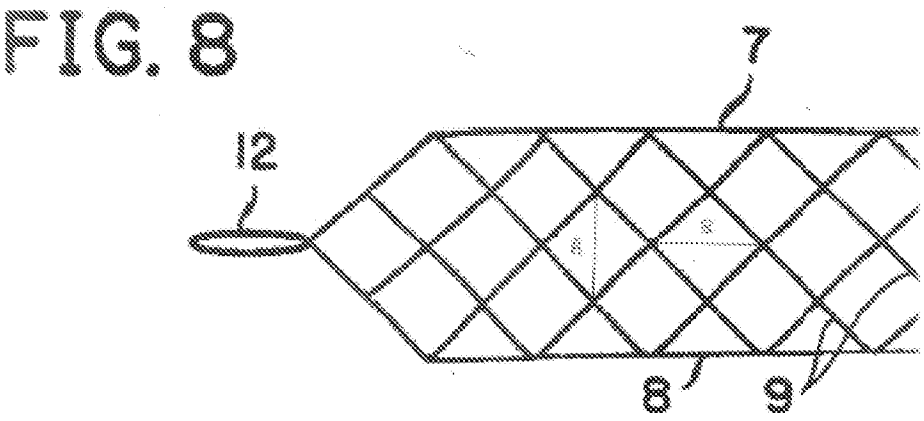
Secondly, independent claim 1 is also independently patentable because the cited prior art does not disclose a net capable of "substantial transverse elongation", and still less one in which such elongation is due to the geometric mechanism specified in the claim as amended. The requirement that the net of the claimed invention be capable of substantial transverse elongation is set forth in the "whereby" clause at the end of the claim, which has been amplified by the current amendment. That is to say, in the present invention the specified net loop orientation contributes to the capability of any widthwise portion of the net to undergo substantial transverse elongation, by loops of said portion being pulled from the initial orientation (i.e. with a longer dimension in the fore and aft direction than in the transverse direction) to a condition in which they are oriented with a longer dimension in the transverse direction than in the fore and aft direction. This transverse elongation (or "lateral stretch") of the net is an important feature of the invention to enable the net to become fully wrapped around the front wheels of the vehicle before the portion between those wheels tightens under the vehicle to the extent that there might otherwise be a risk of the spikes being pulled from the tires, as explained on page 5, line 36 to page 6, line 8 of the application. It should also be understood that this *geometric* mechanism for allowing transverse elongation of the net due to the

orientation of its loops is completely distinct from, and occurs prior to, any transverse elongation that may be due to stretchability under tension of the *material* from which the net is constructed. Horton et al completely fails to address the problem of delaying the build up of transverse tension in the net until it has had time to wrap sufficiently around the front wheels of the vehicle and correspondingly offers no solution to this problem. The Examiner asserts that the Horton et al net "is made of a flexible material, and hence, it [is] capable of substantial elongation, without breaking" and refers to column 3 of the reference. This part of the reference actually only establishes that the cables of Horton et al's net system "are fabricated from a light weight, flexible material such as… Kevlar which resists breaking when a vehicle travels across" the barrier. However *flexibility* and *stretchability* are two quite different properties and Horton et al is completely silent on the question of the latter. More to the point, even if the material of Horton et al's cables was stretchy (which is not what the reference teaches) this would not satisfy the *geometric* mechanism for transverse elongation which is predicated on the initial net loop orientation required by claim 1.

Claim 1 is further non-obvious and patentable because the cited prior art does not disclose or suggest the claimed net loop orientation. Regarding the net loop orientation, the examiner asserts that Figure 8 of Uotila illustrates "that the dimension of the rhombus" – where the rhombus refers to the mesh openings 10 or "loops" in the Applicants' parlance – "is longer in the fore-aft direction than in the transverse direction". This is simply not the case. Firstly since Uotila's net is held in an upright condition its loops 10 have no significant dimension in the "fore and aft" direction at all but only in *vertical* and transverse directions. However even if Uotila's vertical direction is equated to fore and aft this statement is still not correct. The Figures below, extracted from the present application and from the cited Figure of Uotila illustrates the differences in the loop configuration between the invention and the reference.



**Net of Figure 1 and Claim 1 of the present application**




**Net of Uotila Figure 8**

Firstly there is an enlarged portion of Figure 1 of the present application shown above which clearly demonstrates an example of the claim element "the loops of the net being oriented with a longer dimension in the fore and aft direction than in the transverse direction of the device". That is to say the fore and aft dimension denoted "A" on this copy can be seen and measured to be substantially greater than the transverse dimension denoted "B" – in this example when printed on A4 paper dimension "A" is 1.6 cm and dimension "B" is 0.8 cm, a ratio of 2:1. Secondly there is shown above an enlarged portion of Figure 8 of Uotila. In this case it can readily be seen and measured that the vertical dimension "A" is *exactly the same as* the

transverse dimension "B" – when printed on A4 paper both dimensions are 1.3 cm, a ratio of 1:1. Uotila therefore signally fails to disclose the claim element in question which the examiner already admits is absent from Horton.

For each of these three reasons, independent claim 1 of the application is clearly patentable over Horton in view of Uotila and the same applies to its rejected dependent claims 2-8, 10-12, 17, 23 and 31.

The Applicant notes that Figures 10 and 11 of Uotila might appear to show elongated net loops. However these Figures depict the device after an arrest when the net has been distorted by wrapping around the vehicle. The Figures, therefore, are irrelevant to consideration of the claim element which refers to the net loop orientation "when laid on the ground in the path of a vehicle to be arrested" i.e. before an arrest has been effected.

### 2. There is no *prima facie* case of obviousness of independent claims 26 and 29

Regarding independent claims 26 and 29, both of which require that the spikes are attached to the net (or "substrate" in claim 29) by penetrating the net (i.e. by passage of the spikes through the material of the net/substrate), the examiner's position appears to be somewhat inconsistent. With respect to claim 26 he indicates that Horton "does not disclose what method steps are used in the coupling" but with respect to claim 29 he refers to Figure 3 of the reference for how the spike assemblies (52) are attached to the net. This Figure does indeed show how Horton's spikes are attached to the net – and that it is by an entirely different method to what Applicant's claim in claims 26 and 29.

Reproduced below is an extract of "Horton Fig 3" in which the cable 26 (i.e. "the material of the net") has been highlighted in yellow and the shank 51 (i.e. "shaft portion") of the spike has been highlighted in pink. There is clearly no *penetration* whatsoever of the spike through the cable 26.

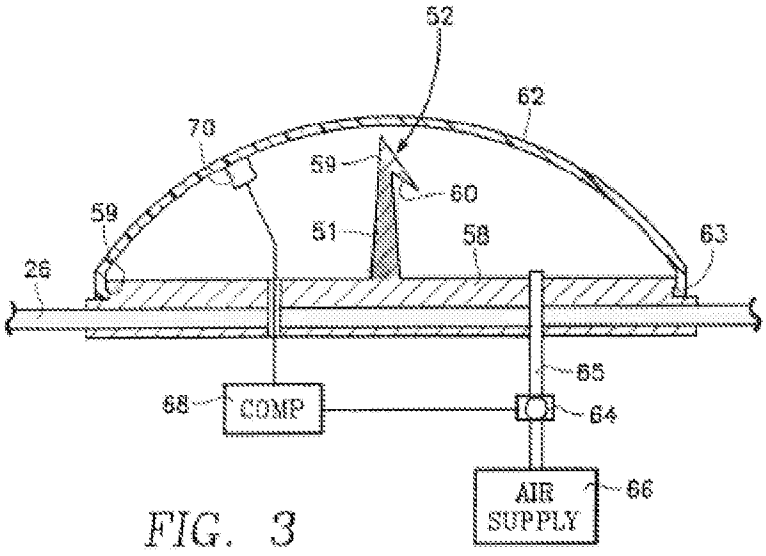



FIG. 3

Contrast the Horton structure with figure 8 of the present application where the spike 8 has penetrated through the net 1 and the knot 1A of the net is encircling the spike shaft 12. Instead what happens in Figure 3 of Horton is that the cable 26 passes through the base 58 of the spike assembly 52 and has no contact at all with the spike itself.

This is not the only patentable difference between independent claims 26 and 29 and Horton. Independent claims 26 and 29 share with independent claim 1 the requirement that once the spikes have become embedded in the front tires of the vehicle and the net/substrate becomes wrapped around the front wheels, *the portion of the net/substrate between those wheels is pulled tight under the vehicle* to prevent further rotation of those wheels. As already pointed out with reference to claim 1 there is no hint or suggestion of this mechanism to stop the vehicle in Horton and the reference functions instead in a manner which involves locking the front and rear tires together with the net and two sets of spikes.

Uotila clearly cannot make up for the deficiencies of Horton in relation to claims 26 and 29 since Uotila has no spikes at all and functions in a completely different manner.

For these reasons claims 26 and 29 of the application are clearly patentable over Horton in view of Uotila and the same applies to their dependent claims 27, 28 and 30.

## III. NEW CLAIMS 32-34

Three new dependent claims are attached to add to the application and which are patentable at least for the same reasons as their parent claims.

## IV. THE ALLOWABLE SUBJECT MATTER

The Applicant acknowledges that claim 9 stands allowable but objected to for depending upon a rejected base claim. The Applicant further believes that claims 13-16, 22 and 25-25 are now allowable in view of the claim amendments made above to overcome the examiner's section 112, 2nd paragraph rejections.

## CONCLUSION

All pending claims are believed to be patentable for the reasons recited above. Favorable reconsideration and allowance of all pending application claims is, therefore, courteously solicited.

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